

# EUROPEAN PATENT OFFICE

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TITLE : PRODUCTION OF DIMETHYL ETHER

ABSTRACT : PURPOSE: To prevent deposition of carbon on the surface of a catalyst and maintain the catalyst at high activity for a long period, by adding steam or water in dehydrating methyl alcohol in the vapor phase using  $\gamma$ -alumina catalyst and industrially producing dimethyl ether.

CONSTITUTION: Methyl alcohol is dehydrated in the presence of  $\gamma$ -alumina catalyst in the vapor phase at 200–400°C, preferably 250–370°C temperature to produce dimethyl ether useful as a substitute for fluorocarbons (aerosol propellant) causing environmental problems. In the process, steam or water in amount of preferably 5–45 pts.wt. based on 100 pts.wt. methyl alcohol is added thereto to eliminate hot spots in a catalyst layer, smooth temperature distribution and simultaneously remarkably reduce deposition of carbon. Thereby the catalyst activity is maintained at a high level for a long period to enable industrial and extremely stabilized operation. As a result, the aimed compound is obtained by an economic and reasonable process.

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